

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN	Inventor(s): Mary E. Brunkow et al.	

Title: COMPOSITIONS AND METHODS FOR INCREASING BONE MINERALIZATION
Express Mail No. EL897871282US

Inventor(s): Mary E. Brunkow et al. Serial No. 09/668,021 Docket No. 240083.508D2

Common Cysteine Backbone

1	50	
human-gremlin.pro	-----	-----
human- <i>cerberus</i> .pro	MHLLL F QLLV LLPLGKTTTRH QDGRQNQSSL SPVLLPRNQR ELPTGNHEEA	
human-dan.pro	-----	-----
human-beer.pro	-----	-----
51	100	
human-gremlin.pro	-----M SRTAYTVGAL LLLL G TLLPA AEGKKKG S QG	
human- <i>cerberus</i> .pro	EKP D LFVAV PHLVAT.SPA GEGQR Q R R EKM LSRFGRFWKK PEREMHPSRD	
human-dan.pro	-----	-----
human-beer.pro	-----	MQLPLA LCLVCLLVHT
101	150	
human-gremlin.pro	AI.PPPDKAQ HNDSEQTQSP QQPGSRNRGR GQGRGTAMP G EEVLESSQEA	
human- <i>cerberus</i> .pro	SDSEPFPPGT QS L IQPID.G MKMEK S PLRE EAKKF W HHFM FRKTPASQGV	
human-dan.pro	-----	MLRV L VGA L PAMLLAAPP P
human-beer.pro	AFRVVEGQGW QAFKNDATEI IPELGEYEP P PPELENNKTM NRAENGGRPP	
151	200	
human-gremlin.pro	LHVTERKYLK RDWCKTQPLK QT I HEEGCNS RTIINRF.CY GQCNSFYIPR	
human- <i>cerberus</i> .pro	ILPIKS H EVH WETCRTV P FS QT I THEGCEK VVVQNNL.CF GKCGSVHFP.	
human-dan.pro	INKLALFPDK SAWCEAKNIT QIVGHSGCEA KSIQNRA.CL GQCFSYSVPN	
human-beer.pro	HH P FETKDV S EYSCRELHFT RYVTDGPCRS AKP V TELVCS GQCGPARLLP	
201	250	
human-gremlin.pro	HIRKEEGSFQ SCSF...CKP KKFTTMMVTL NCPELQPPTK K.KRVTRVKQ	
human- <i>cerberus</i> .pro	..GAAQHSHT SCSH...CLP AKFTTMLPL NCTELSSVIK V...VMLVEE	
human-dan.pro	TFPQSTESL V HCDS...CMP AQSMWEIVTL ECPGHEEVPR VDKLVEKILH	
human-beer.pro	NAIGRGK W R PSGPDFRCIP DRYRAQRVQL LCPG A PRA RKVRLVAS..	
251	300	
human-gremlin.pro	CRC.ISIDLD -----	
human- <i>cerberus</i> .pro	CQCKVKTEHE DGHILHAGSQ DSFIPGVSA-----	
human-dan.pro	CSCQACGKEP SHEGLSVYVQ GEDGPGSQPG THPHPHPHPH PGGQTPEPED	
human-beer.pro	CKCKRLTRFH NQSELKDFGT EAARPQKGRK PRPRARSAKA NQAELENAY~	
301	314	
human-gremlin.pro	-----	
human- <i>cerberus</i> .pro	-----	
human-dan.pro	PPGAPHTEEE GAED	
human-beer.pro	-----	

Fig. 1

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Human Beer Gene Expression by RT-PCR

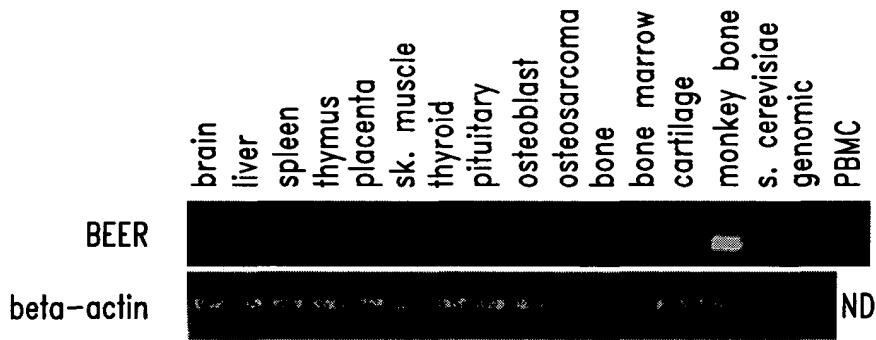


Fig. 2

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RNA In Situ Hybridization of Mouse Embryo Sections

Fig. 3A

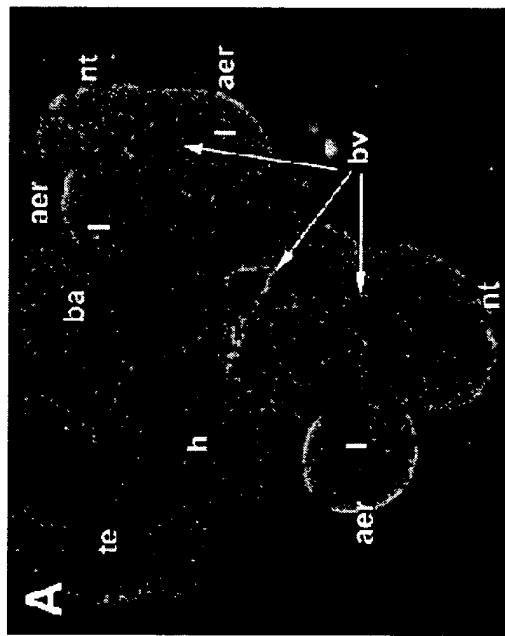


Fig. 3B

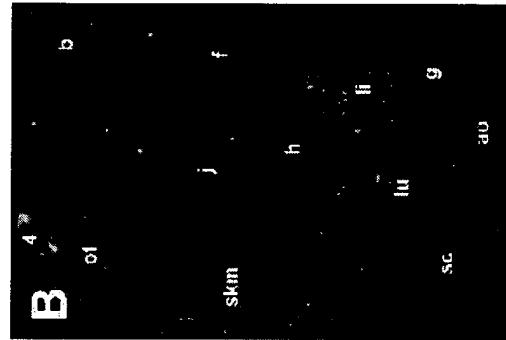


Fig. 3C

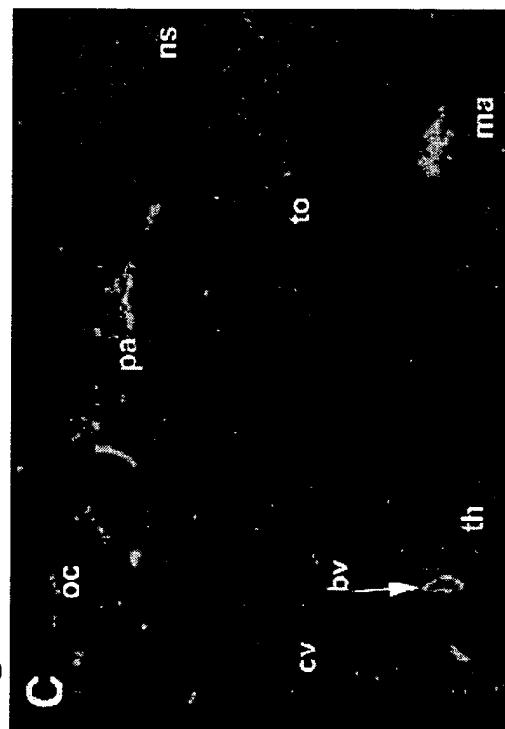
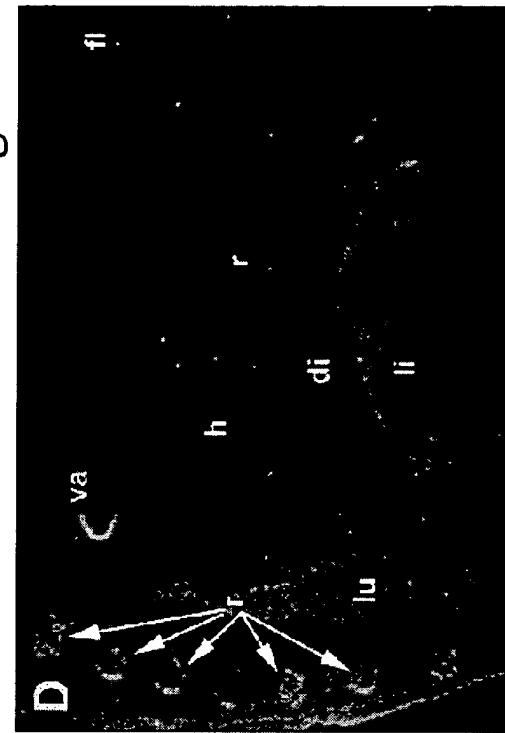


Fig. 3D



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Antibody Selectivity

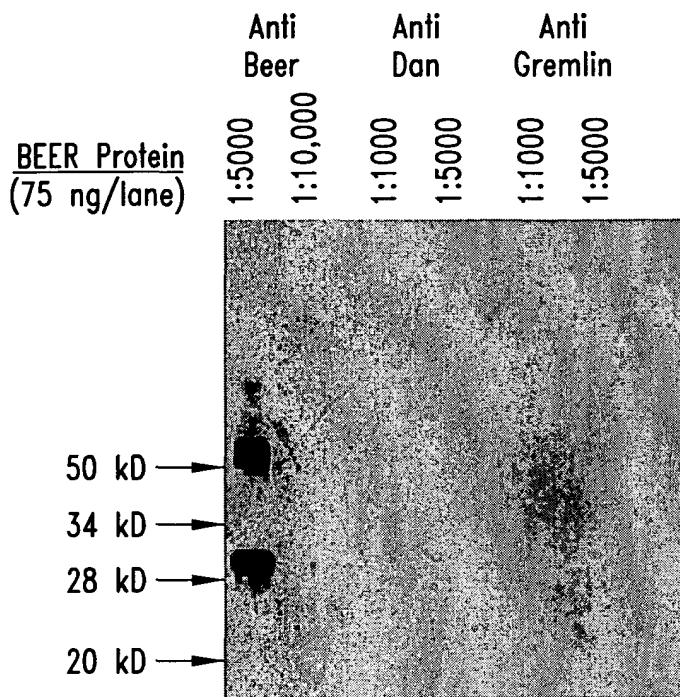


Fig. 4A

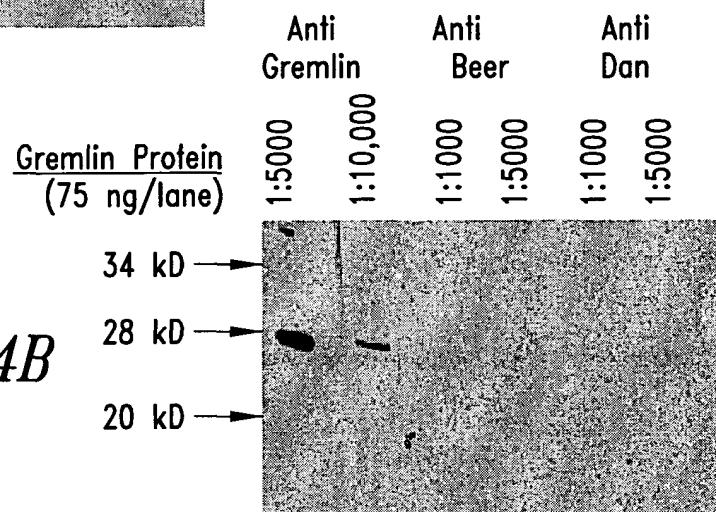


Fig. 4B

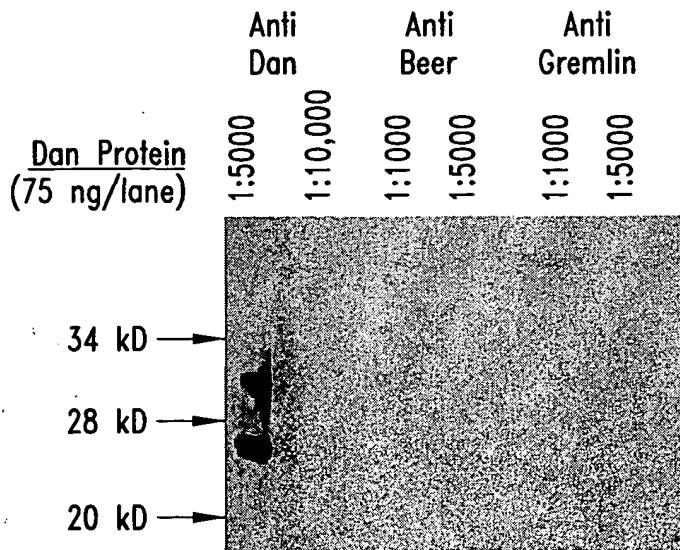
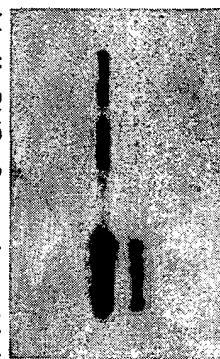


Fig. 4C

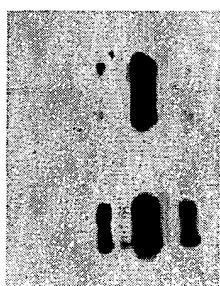
Evaluation of Beer binding to BMP family members
Anti-FLAG Immunoprecipitation

Beer	+	+	-	BMP-6
BMP-6	+	+	+	control



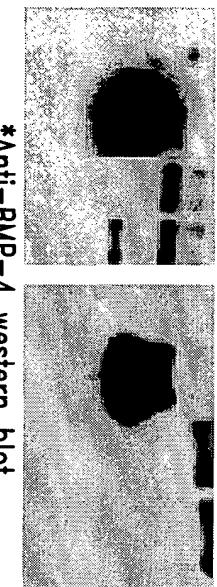
*Anti-BMP-6 western blot

Beer	+	+	-	BMP-5
BMP-5	+	-	-	control



*Anti-BMP-5 western blot

BMP-4	C	-	+	C	-	+	BMP-4
Beer	-	-	-	-	+	+	Beer
Cerberus	-	+	+	-	-	-	Cerberus



*Anti-BMP-4 western blot

Fig. 5

INVENTOR(S): Mary E. Brunckow et al. Serial No. 09/668,021 Docket No. 240083.508D2
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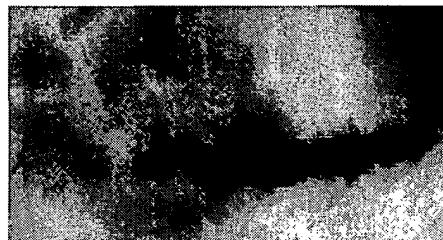
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BMP-5/Beer Dissociation Constant Characterization

.75 1.5 7.5 15 30 60 120 nM BMP-5

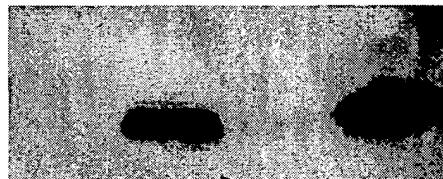


*Anti-FLAG immunoprecipitation

*Anti-BMP-5 western blot

Ionic Disruption of BMP-5/Beer Binding

NaCl(mM)	500	150	150	BMP-5 western control
Beer	+	+	-	
BMP-5	+	+	+	



*Anti-FLAG immunoprecipitation

*Anti-BMP-5 western blot

Fig. 6